

CBCS SCHEME

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15MT562

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019 Automation in Manufacturing

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. What are the types of automation strategies? Explain automation migration strategy in detail. (08 Marks)
- b. Define and give the mathematical models for :
- (i) Production rate (ii) Production capacity
- (iii) Manufacturing lead time (iv) Work in process (08 Marks)

OR

- 2 a. With a neat sketch, explain the functions of manufacturing support system. (08 Marks)
- b. List and explain the types of automation. (08 Marks)

Module-2

- 3 a. What are included in advanced automation functions? Explain the function error detection and recovery in detail. (08 Marks)
- b. Explain with a block diagram different levels of automation. (08 Marks)

OR

- 4 a. Explain steady state optimal control and adaptive control strategies. (08 Marks)
- b. Differentiate between traditional and modern view of quality. (08 Marks)

Module-3

- 5 a. List and explain the components of a manufacturing system. (08 Marks)
- b. Explain advanced manufacturing planning system. (08 Marks)

OR

- 6 a. Explain retrieval type of computer aided process planning system. (CAPP system). (08 Marks)
- b. Explain the concept of lean manufacturing in detail. (08 Marks)

Module-4

- 7 a. Explain the construction and working of coordinate measuring machine (CMM). (08 Marks)
- b. Explain laser scanning and optical triangulation techniques of non-contact inspection. (08 Marks)

OR

- 8 a. Illustrate the working of machine vision system with a neat sketch. (08 Marks)
- b. Give an overview on computer aided inspection (CAI) and computer aided testing (CAT). (08 Marks)

Module-5

- 9 a. Define group technology. Explain the benefits of group technology. (08 Marks)
- b. Explain the features of part classification and coding system. (08 Marks)

OR

- 10 a. Define Flexible Manufacturing System (FMS). List and explain the components of FMS. (08 Marks)
- b. Explain planning and implementation issues in flexible manufacturing systems (FMS). (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.